

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended): A data transfer system comprising:

a plurality of requesters configured to send data transfer requests, the requesters configured to transfer data when authorized;

a transfer controller configured to receive the data transfer requests from the requesters, the transfer controller configured to authorize one of the data transfer requests to perform arbitration for the data transfer requests, the transfer controller configured to send a transfer directive at a predetermined timing;

a network configured to receive the transfer directive to transfer data from an authorized requester based on the transfer directive; and

a plurality of memories including a plurality of modules, each of the modules having data input and output unit, the memories configured to receive the transfer directive to receive transfer data from the network based on the transfer directive,

wherein the transfer controller comprises:

a request storing unit configured to receive data transfer requests from the requesters;

an address decoder configured to decode addresses of the data transfer requests stored in the request storing unit;

a module arbitration unit configured to perform arbitrations of decoded data transfer requests on a per-module basis, the module arbitration unit including a plurality of module arbiters that hold the decoded data transfer requests for each memory module;

a network arbitration unit configured to perform arbitrations of the decoded data transfer requests for allocating the network; and

a transfer directive generator configured to generate transfer directives related to data transfer requests that are granted authorization to use the network by the module arbitration unit and network arbitration unit.

Claim 2. (Original): The data transfer system as claimed in claim 1, wherein the transfer controller performs arbitration for the memories then performs arbitration for the network.

Claim 3. (Original): The data transfer system as claimed in claim 1, wherein the data transfer controller performs arbitration for the network then performs arbitration for the memories.

Claim 4. (Original): The data transfer system as claimed in claim 1, wherein the transfer controller performs arbitration for the network and arbitration for the memories in parallel.

Claim 5. (Original): The data transfer system as claimed in claim 1, wherein a data width of the network and data input and output width of the memories are equal.

Claim 6. (Original): The data transfer system as claimed in claim 1, wherein the transfer controller detects that the data transfer requests from the requesters are read access or write access, then the transfer controller controls the timing to send transfer directives based on the access.

Claim 7. (Original): The data transfer system as claimed in claim 1, wherein the plurality of modules includes a plurality of macros, the data is divided to be stored by the plurality of macros.

Claim 8. (Original): The data transfer system as claimed in claim 1, wherein the transfer controller controls transferring the data based on a major cycle defined to be at least two clock cycles.

Claims 9 -10 (Canceled).

Claim 11. (Currently Amended): The data transfer system as claimed in claim 1, wherein each of the module arbiters selects a macro that can currently be accessed earliest among the data transfer requests.

Claim 12. (Currently Amended): The data transfer system as claimed in claim 1, wherein each of the module arbiters selects a data transfer request requesting to an accessible macro based on the response time of the macro.

Claim 13. (Currently Amended): The data transfer system as claimed in claim 1, wherein each of the module arbiters receives priority information for transferring of the requesters to select a request having the highest priority among the data transfer requests.

Claim 14. (Currently Amended): The data transfer system as claimed in claim 1, wherein the network arbitration unit allocates, per a major cycle defined to be at least two

clock cycles, a network connection of the network to requesters in consideration of read and write cycles based on the number of the buses of the network.

Claims 15 – 20 (Canceled).